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record in favor of a bill designed to correct the evils of expert medical testimony in the courts. The draft of the bill provides, among other things, that "in criminal cases for homicide where the issues involve expert knowledge or opinion the court shall appoint one or more suitable disinterested persons, not exceeding three, to investigate such issues and testify at the trial; and the compensation of such person or persons shall be fixed by the court and paid by the county where indictment was found, and the fact that such witness or witnesses have been so appointed shall be made known to the jury. This provision shall not preclude either prosecution or defense from using other expert witnesses at the trial."

#### UNIVERSITY AND EDUCATIONAL NEWS

A BILL has been introduced in the Wisconsin legislature which proposes to increase the building fund of the University of Wisconsin from \$200,000 to \$300,000 annually, and to lengthen the period of this appropriation from five to seven years.

A NEW industrial fellowship has been presented to the University of Kansas by the Holophane Glass Co. It yields \$1,500 a year for two years, together with ten per cent. of the profits that may arise from any discoveries made by the student who pursues the special study. The fellowship is open to students of any university, but the work will be done in the laboratories of the University of Kansas.

BRYN MAWR COLLEGE has established ten graduate scholarships, five open to English, Irish or Scotch and five to German women students, who have attained a standard equivalent to that of the bachelor's degree. The scholarship covers the fees for board, residence and tuition at Bryn Mawr College for one academic year and as these fees for graduate students amount to \$405 this is equivalent to a scholarship of £81 or of 1,620 Marks.

MR. CHINUBHAI MADHOWLAL has given four lakhs of rupees (about \$125,000) to be applied

by the Bombay Government towards the development of science teaching in Ahmedabad, in connection, if possible, with the proposed Curline Institute in Bombay.

THE University of Liverpool has received an offer from Mr. Alexander Elder, to contribute \$50,000 for the establishment of a chair of naval architecture.

ON recommendation of the faculty of the medical department of Western Reserve University, the trustees have voted that beginning with the academic year 1910-11 the requirement for unconditional entrance to the medical department shall be graduation from an approved college or scientific school granting the bachelor's degree (or equivalent) following the completion of a course of at least three collegiate years and including inorganic chemistry, physics, biology and Latin. Conditional entrance will be granted upon the completion of the work of the junior year in the course of an approved college or scientific school enforcing a four-year course (or equivalent degree) including the subject requirements enumerated above, conditioned upon the student obtaining a baccalaureate degree before he enters the third year in the medical school.

DR. A. GRAHAM LUSK, professor of physiology at the University and Bellevue Hospital Medical School has been appointed professor of physiology in the Cornell Medical College.

DR. DANA B. CASTEEL, instructor in zoology in the University of Michigan, has been appointed instructor in zoology in the University of Texas.

CAPTAIN H. G. LYONS, F.R.S., director-general of the survey of Egypt, has been appointed lecturer in geography at the University of Glasgow.

#### DISCUSSION AND CORRESPONDENCE

##### THE LAW OF RADIATION

TO THE EDITOR OF SCIENCE: Is it worth while to keep on upholding certain theories, and to wholly neglect certain new facts which tend to undermine the very foundation on which these theories rest? What justification

is there, for instance, in declaring that my "definition for temperature"<sup>1</sup> is erroneous without an accompanying proof showing that Newton's law of radiation is also erroneous? As this particular matter stands, Dr. Reid has simply made a dogmatic assertion, for if Newton's law is true (and I claim to have demonstrated that it is true) it follows as a theoretical necessity that *absolute temperature is a direct measure of the intensity of ether vibration*. If Stefan's law, or any other law except Newton's, can be demonstrated to be true, then, and then only, will scientists be justified in summarily condemning my conclusions.

J. M. SCHAEFERLE

ANN ARBOR, MICH.,  
January 4, 1909

#### AMERICAN SCIENTIFIC PRODUCTIVITY

It is well that we should be reminded by Professor Nichols in his presidential address before the American Association (SCIENCE, January 1, 1909) and by Professor Pickering in his articles in *The Popular Science Monthly* (October, 1908, and January, 1909) that the scientific work accomplished in this country is not commensurate with its population and its wealth, and that Professor Willcox (SCIENCE, January 29, 1909) should reinforce this fact from the awards of the Nobel prizes.

But while we can not too strongly emphasize the circumstance that we are not doing all that we should for the advancement of science and that this is partly due to the fact that the scientific career is not made sufficiently attractive to obtain and retain the best men, nor sufficiently free to enable them to do their best work, it yet seems that the situation is by no means discouraging. The articles mentioned measure our scientific productivity by the eminent men we have. In so far as this is an adequate method, it tends to measure our activity a generation ago; for men do not usually obtain international recognition until long after the work for which it is given has been accomplished.

Professor Pickering finds that of the 87 scientific men who are members of at least

<sup>1</sup> SCIENCE, January 1, 1909, p. 29.

two foreign academies only six are Americans. Each of the two eminent American men of science who is a member of the largest number of academies is in his seventy-third year. It is a striking fact that of the six distinguished Americans, three are astronomers; and astronomy is the only science in which thirty years ago the facilities for research work in this country were equal to those of the leading European nations. Of the remaining three, two have not been engaged in teaching, and the third has been practically freed from teaching for his research work. We may have, in accordance with Professor Pickering's data, but six scientific men as distinguished as 17 in Prussia, 13 in England and 12 in France, but this would represent the relative scientific activity of the country at the time when our universities were only beginning to develop and when research work under the government was only beginning.

The Nobel prizes have, contrary to the instructions of the founder, been, as a rule, awarded to eminent men for work done in the past; and the fact that of twenty-four prizes in the sciences only one has come to America does not discredit our present scientific research. If the provision of Nobel's will had been followed and the prize had been given to the person "rendering the greatest service to humanity," by "having made the most important discovery or invention in the department of physical science," the first two awards should probably have been to Mr. Bell and Mr. Edison.

It is a curious fact that the three subjects in which the Nobel prizes are awarded—physical science, chemistry and medicine—are those in which we are particularly weak. These are the sciences in which the applications are the most direct, and it looks as if those competent to advance these sciences had been carried into practical work. This is contrary to my preconceptions, for I should suppose that when there are large opportunities for practical work, there should also be advances in pure science. Perhaps it is only individual eminence that is here lacking, and we are in fact contributing our share to